

CLAIMS

I Claim:

- 1 1. A method for performing an alignment self check of a wavelength
- 2 meter comprising:
 - 3 (a) placing a reference signal into a reference signal path of the
 - 4 wavelength meter;
 - 5 (b) placing the reference signal into an unknown signal path of the
 - 6 wavelength meter; and,
 - 7 (c) detecting whether after traveling through the unknown signal path,
 - 8 the reference signal has a same period as after traveling through the reference
 - 9 signal path.

- 1 2. A method as in claim 1 wherein (c) includes:
 - 2 sampling values of the reference signal after traveling through the
 - 3 unknown signal path, based on frequency of the reference signal after traveling
 - 4 through the reference signal path to determine whether the sampled values are
 - 5 at constant amplitude.

- 1 3. A method as in claim 1 additionally comprising:
 - 2 (d) notifying a user of the wavelength meter when after traveling through
 - 3 the unknown signal path, the reference signal has a different period than after
 - 4 traveling through the reference signal path.

1 4. A method as in claim 1 additionally comprising:
2 (d) performing realignment of the wavelength meter when after traveling
3 through the unknown signal path, the reference signal has a different period
4 than after traveling through the reference signal path.

1 5. A method as in claim 1 wherein the wavelength meter includes a
2 Michelson interferometer.

1 6. A method as in claim 1 additionally comprising:
2 translating a mirror in both the unknown signal path and in the reference
3 signal path while detecting whether after traveling through the unknown signal
4 path, the reference signal has the same period as after traveling through the
5 reference signal path.

1 7. A wavelength meter comprising:
2 a reference signal path;
3 an unknown signal path;
4 a detector that detects signal activity on the reference signal path and
5 signal activity on the unknown signal path; and,
6 an analyzer that determines whether, after traveling through the
7 unknown signal path, a reference signal has a same period as after traveling
8 through the reference signal path.

1 8. A wavelength meter as in claim 7 wherein the analyzer checks values
2 of the reference signal sampled by the detector after traveling through the
3 unknown signal path, based on frequency of the reference signal after traveling
4 through the reference signal path, to determine whether the sampled values are
5 at constant amplitude.

1 9. A wavelength meter as in claim 7 wherein the wavelength meter
2 notifies a user of the wavelength meter when after traveling through the
3 unknown signal path, the reference signal has a different period than after
4 traveling through the reference signal path.

1 10. A wavelength meter as in claim 7 wherein the wavelength meter
2 performs realignment of the wavelength meter when after traveling through the
3 unknown signal path, the reference signal has a different period than after
4 traveling through the reference signal path.

1 11. A wavelength meter as in claim 7 wherein the wavelength meter
2 includes a Michelson interferometer.

1 12. A wavelength meter as in claim 7 wherein the analyzer checks values
2 of the reference signal sampled by the detector to determine whether the
3 sampled values are at constant amplitude.

1 13. A wavelength meter as in claim 7 wherein the wavelength meter
2 includes a mirror that is translated while the detector detects signal activity on
3 the reference signal path and signal activity on the unknown signal path.

1 14. A wavelength meter comprising:
2 reference signal path means for guiding a signal;
3 unknown signal path means for guiding a signal;
4 detector means for detecting signal activity on the reference signal path
5 means and signal activity on the unknown signal path means; and,
6 analyzer means for determining whether, after traveling through the
7 unknown signal path means, a reference signal has a same period as after
8 traveling through the reference signal path means.

1 15. A wavelength meter as in claim 14 wherein the analyzer means
2 checks values of the reference signal sampled by the detector means after
3 traveling through the unknown signal path means, based on frequency of the
4 reference signal after traveling through the reference signal path means, to
5 determine whether the sampled values are at constant amplitude.

1 16. A wavelength meter as in claim 14 wherein the wavelength meter
2 notifies a user of the wavelength meter when after traveling through the
3 unknown signal path means, the reference signal has a different period than
4 after traveling through the reference signal path means.

1 17. A wavelength meter as in claim 14 wherein the wavelength meter
2 performs realignment of the wavelength meter when after traveling through the
3 unknown signal path means, the reference signal has a different period than
4 after traveling through the reference signal path means.

1 18. A wavelength meter as in claim 14 wherein the wavelength meter
2 includes a Michelson interferometer.

1 19. A wavelength meter as in claim 14 wherein the analyzer means is also
2 for checking values of the reference signal sampled by the detector means to
3 determine whether the sampled values are at constant amplitude.

1 20. A wavelength meter as in claim 14 wherein the wavelength meter
2 includes a mirror that is translated while the detector means detects signal
3 activity on the reference signal path means and signal activity on the unknown
4 signal path means.